## **Questionnaire for Scoping Study Participants**

In order to make the running of the scooping study workshop as efficient as possible, we want participants in this activity to start thinking about the questions and issues that should be considered by the scooping study, the types of research and observations that are required to address these questions and issues, and the design of a field-based studies that are required to carry out this research. Thinking about the answers to these questions prior to the workshop will provide a basis for the discussions that will be carried out during the breakout sessions.

Prior to the end of July, could you provide answers to the following questions to Eric Kasischke (ekasisch@umd.edu).

The answers to question 2-4 will provide the starting point for the August Workshop. We would like your answers to these questions by 27 July so that they can be compiled for distribution at the workshop (send to ekasisch@umd.edu).

- 1. What is your area of research or specialization (e.g., research on impacts of insects, study of thermokarst, wildlife management, remote sensing of fire, etc.)
- 2. In your area of specialization, what are the key research issues, unanswered questions, monitoring requirements, or information requirements with respect to the impacts of climate change to sub-arctic and arctic landscapes and ecosystems?
- 3. In your area of specialization, what are the key ecosystem services that are being affected or likely to be impacted by the direct and indirect effects of climate change?
- 4. What types of models are needed to project the impacts of climate change on landscape characteristics and ecosystem services, and to understand the feedbacks between climate and the land surface?

For those of you who will be attending the August Workshop, could you develop a set of answers to the following questions. The answers to the questions will provide the foundation for the development of the experiment plan during the August Workshop.

- 5. What additional research is needed to address the unanswered questions and issues that you identified in Questions 2 and 3 and to further develop the models in Question 4?
- 6. How would you design a 3-6 year field study to carry out the research identified in Ouestion 4?

- 7. What data and observations are needed to carry out the research identified in Questions 5 and 6?
- 8. What data sets are needed for monitoring short and long-term changes to landscape features that are the direct or indirect result of climate change in your area of research or specialization?
- 9. What types of information systems are needed to support to provide access to the data and information that would be generated as part of a large-scale field campaign, not only to researchers, but to the wide range of stakeholders who require information on the impacts of climate change on a wide-range of ecosystem services?